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# Introducing Ecosystems



# Introducing Ecosystems

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## Objectives

To understand the mechanics that control food webs and ecosystems

To appreciate the interdependency that exists between the different parts of any ecosystem

To be able to quantify elements of Gersmehl's model and interpret the relative sizes of nutrient flows and stores



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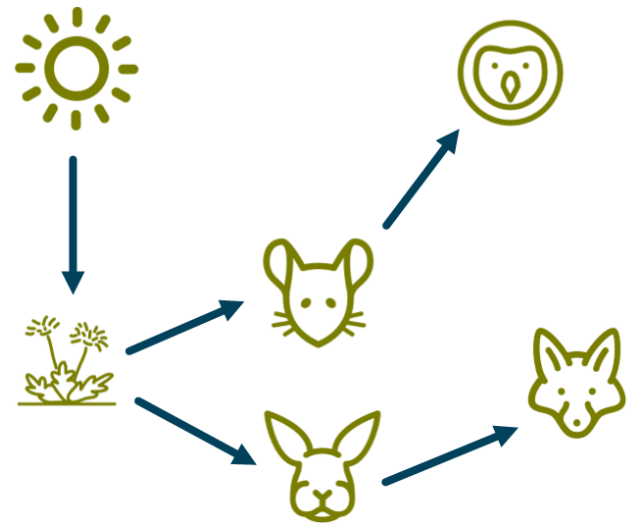
**Food webs are an important part of ecosystems.**

**What is a food web?**

**What might it tell us about the relationships between plants and animals?**

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**Food Web: A system  
of linked organisms  
that depend on each  
other for sources of  
energy.**





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## Ecosystem



## Ecosystem

A network of living and non-living things interacting together



## Ecosystem

A network of living and non-living things interacting together



## Biome





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## Ecosystem

A network of living and non-living things interacting together



## Biome

A large geographical area of specialised plant and animal groups



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## Food Web



## Food Web

A system of food chains  
joined together in different  
ways



## Food Web

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ways



## Food Chain



## Food Web

A system of food chains joined together in different ways



## Food Chain

A series of living things that use each other as sources of food



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## Primary Producer





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## **Primary Producer**

An organism (such as a plant) that converts solar energy into physical structure



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**Secondary  
Consumer**



## Secondary Consumer

An organism that gains energy by eating a primary consumer



## Secondary Consumer

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## Decomposer



## **Secondary Consumer**

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## **Decomposer**

An organism that breaks down dead plants and animals into nutrient matter





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**Herbivore**



## Herbivore

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**Carnivore**



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**Omnivore**



## Omnivore

An organism that eats both  
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## Trophic Level



## Omnivore

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## Trophic Level

The position an organism occupies in a food chain



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**Biotic**



## **Biotic**

Living things within an  
ecosystem



**Biotic**

Living things within an  
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**Abiotic**



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**Biotic**

Living things within an  
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**Abiotic**

Non-living things in an  
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On your sheet, draw  
arrows that show the  
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**HINT:** The arrow always starts at  
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Sun



Peregrine Falcon



Fox



Sparrow



Dandelion



Snail



Hedgehog



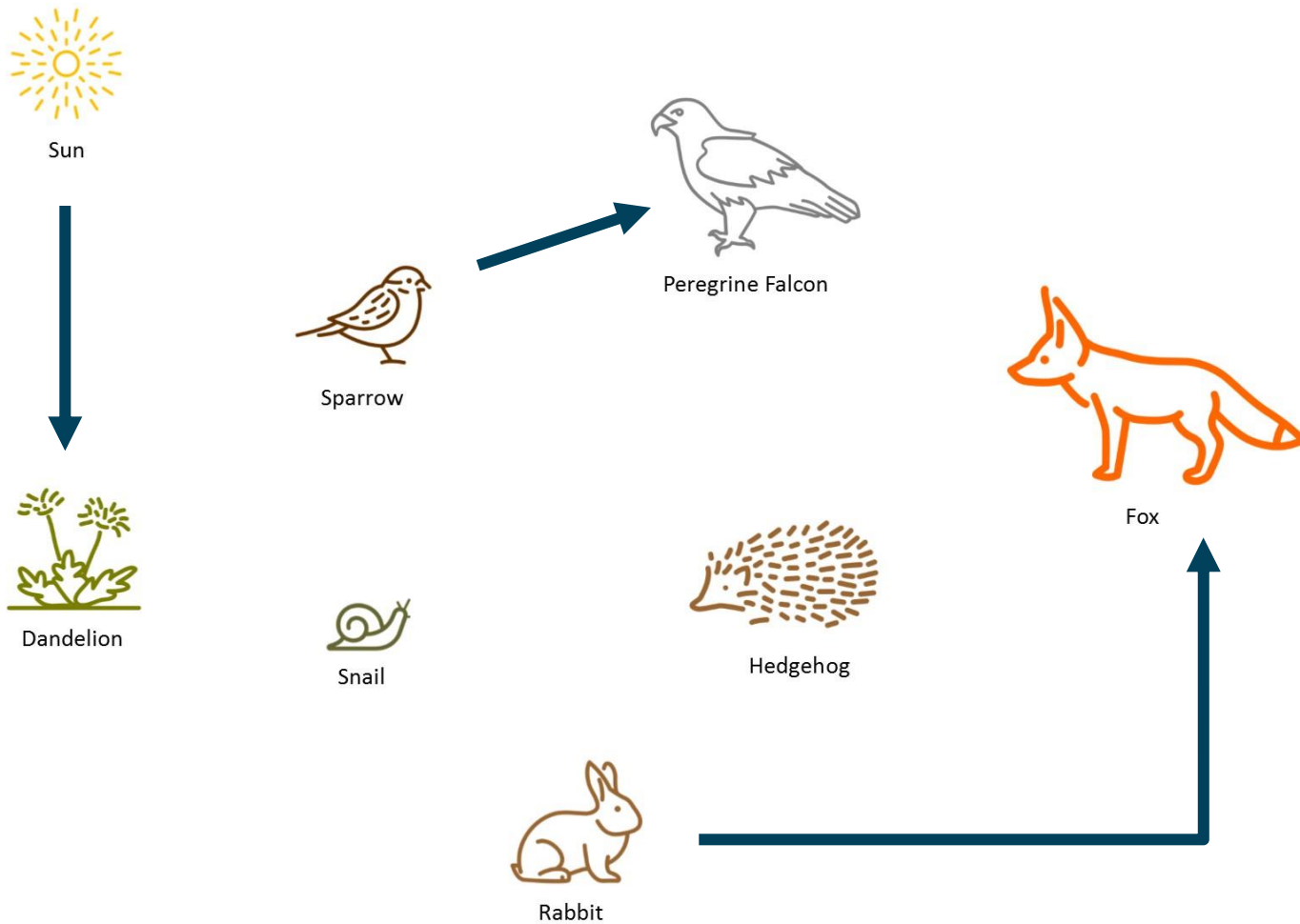
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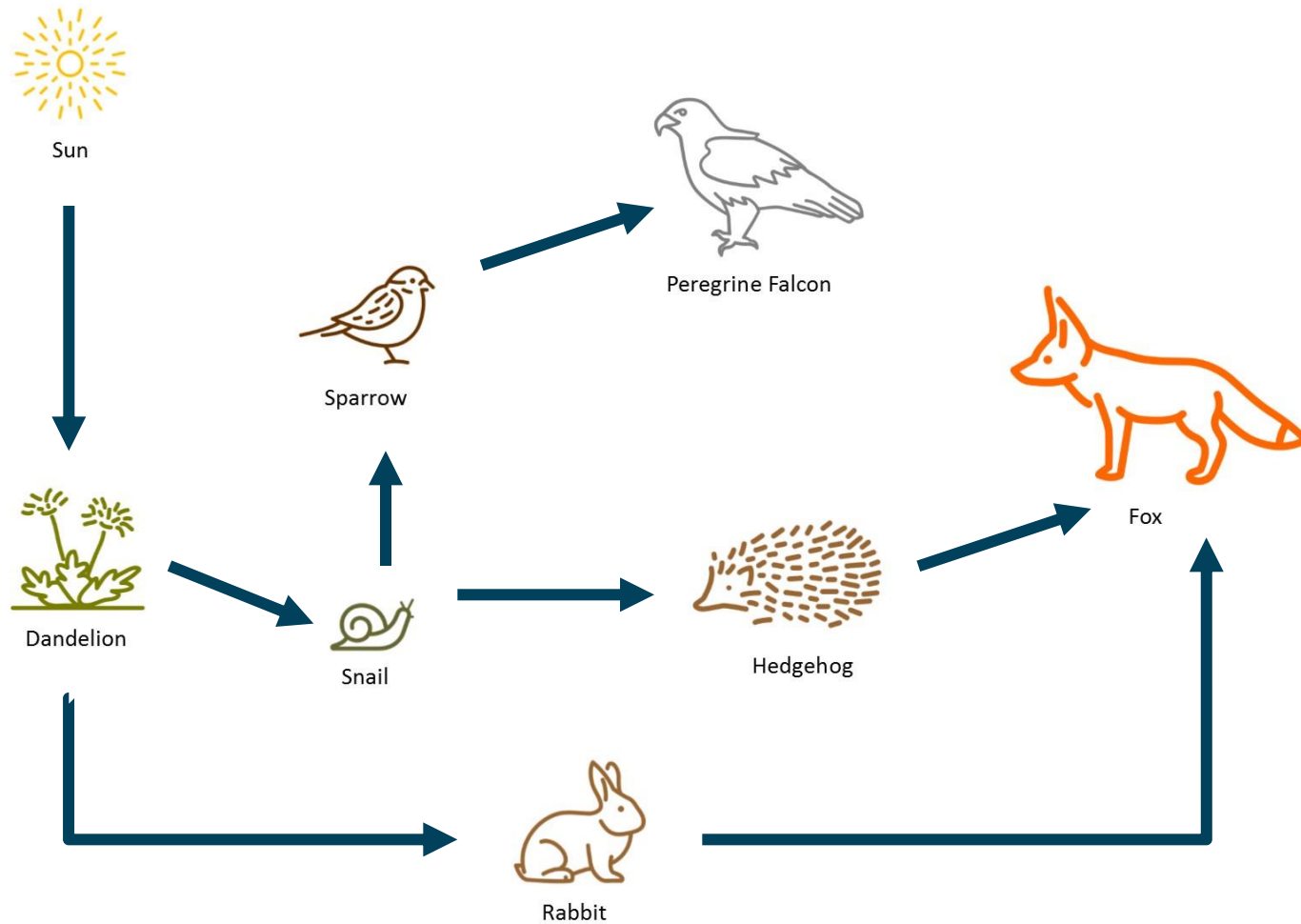
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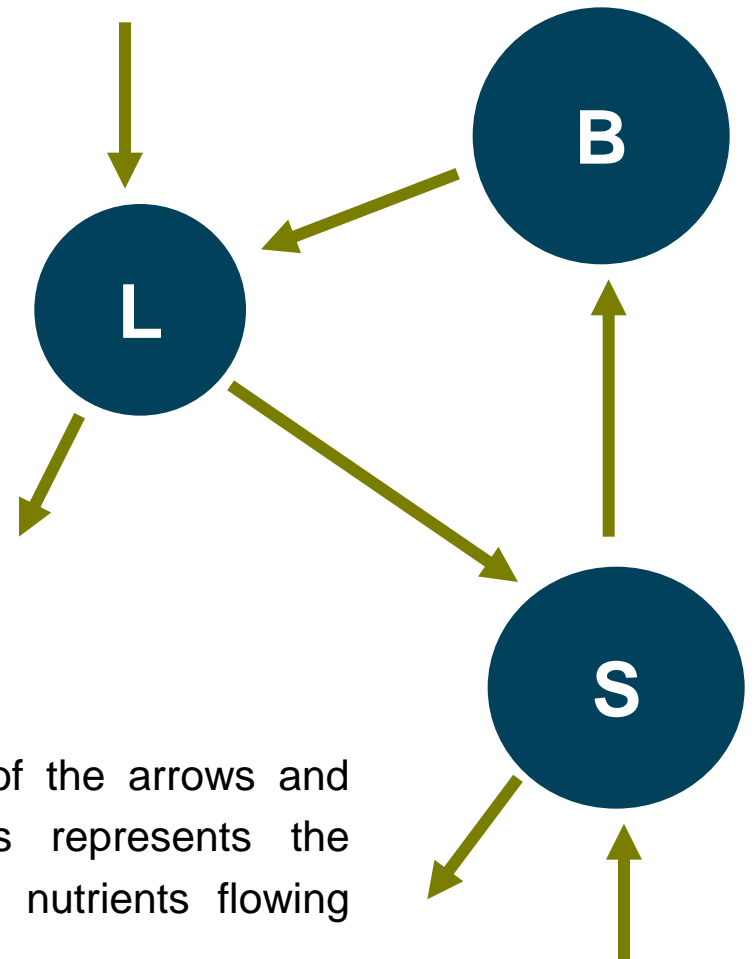


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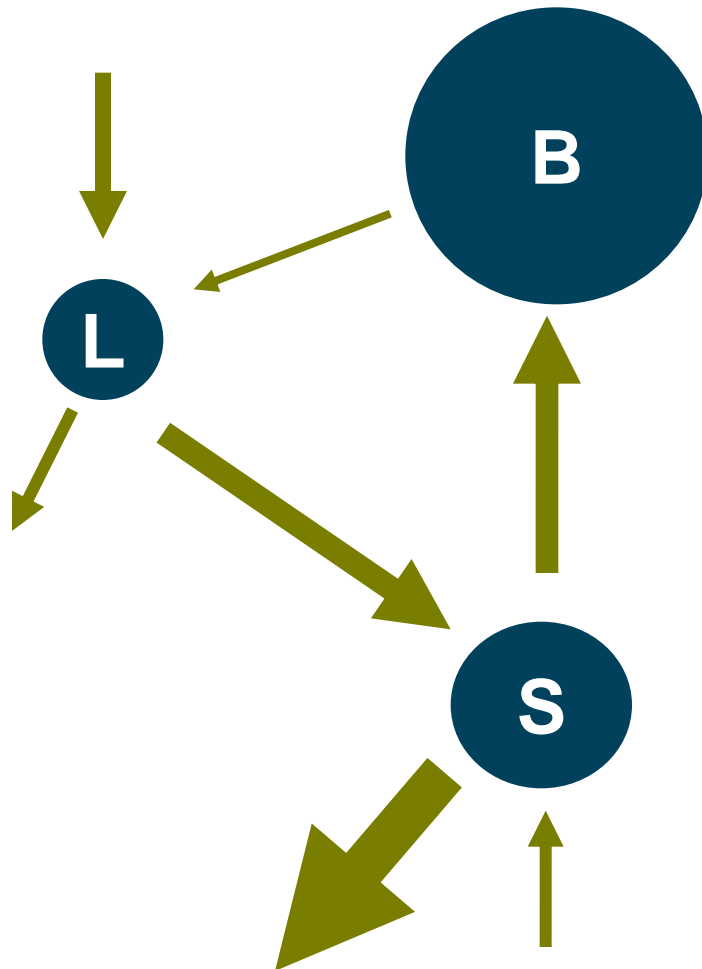
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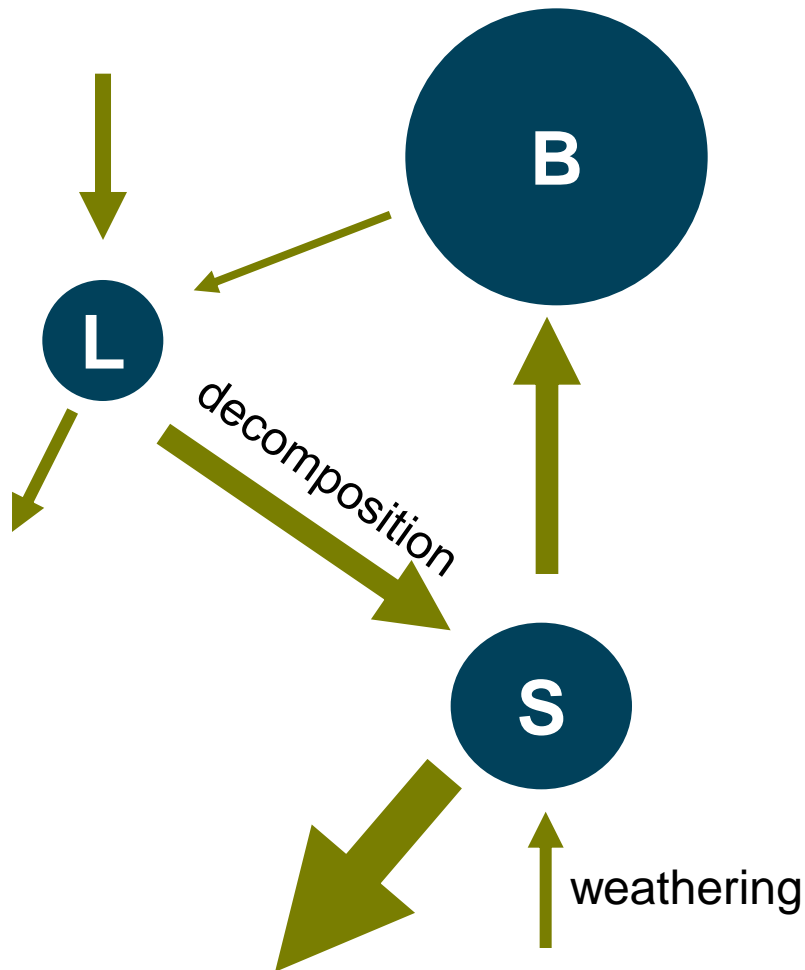
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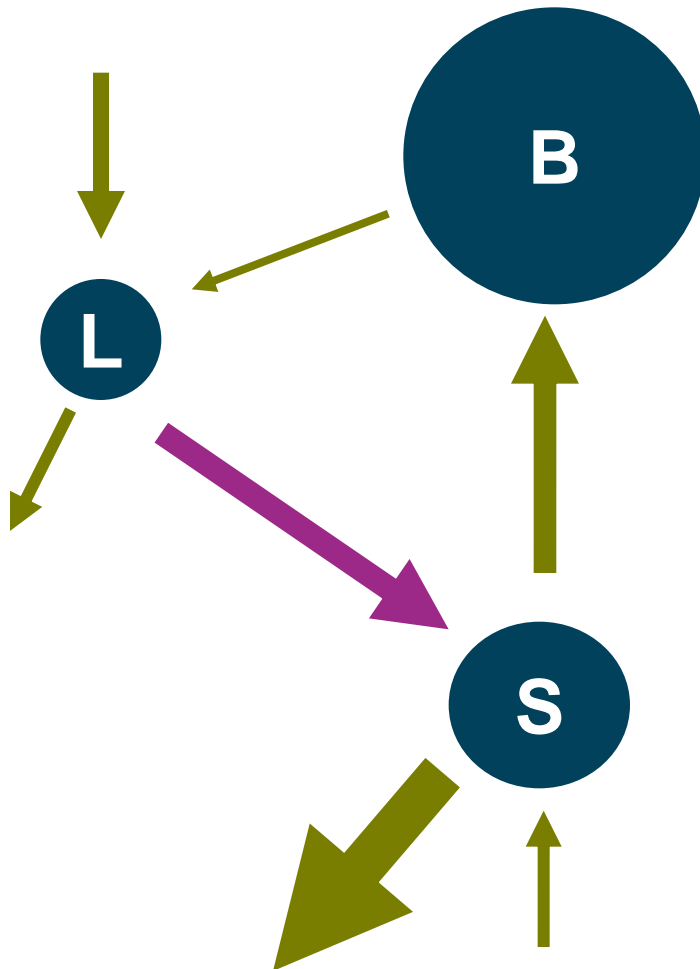
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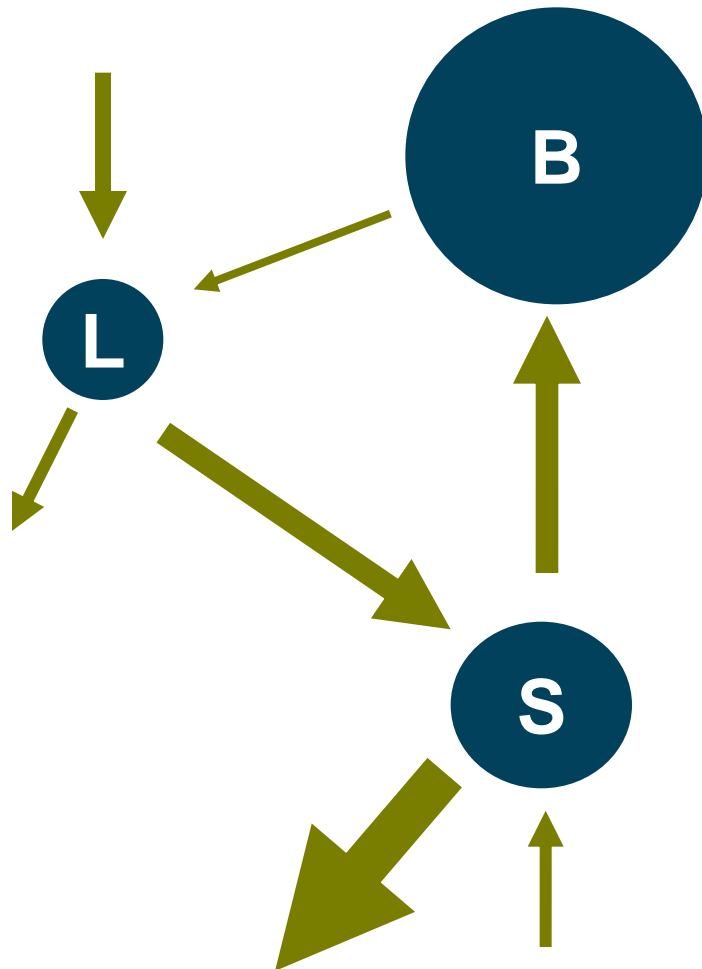
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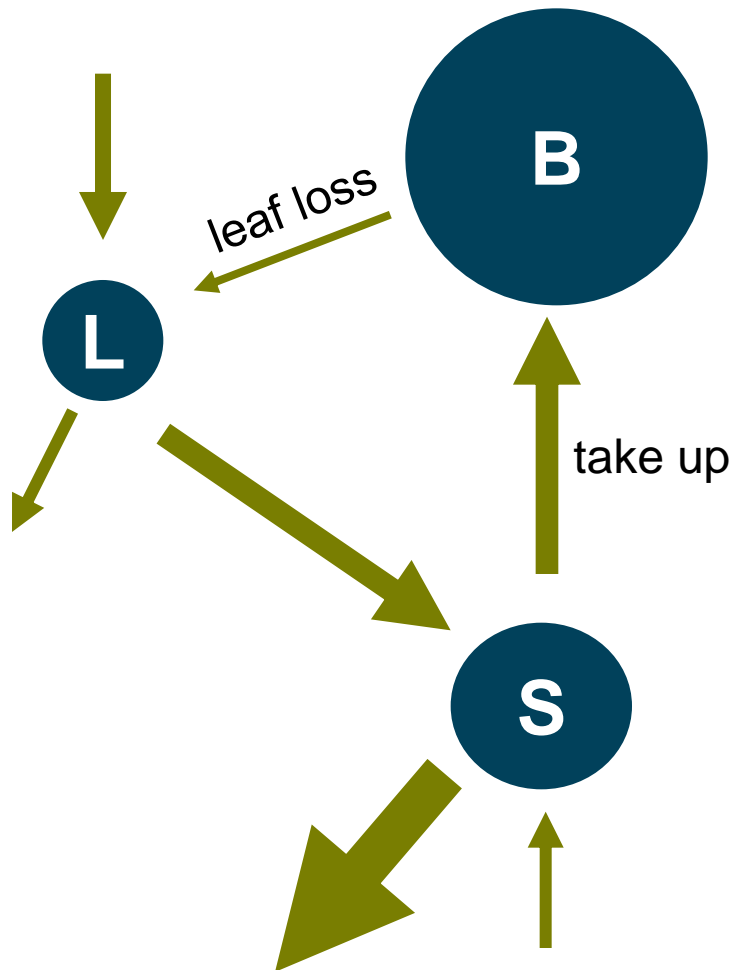
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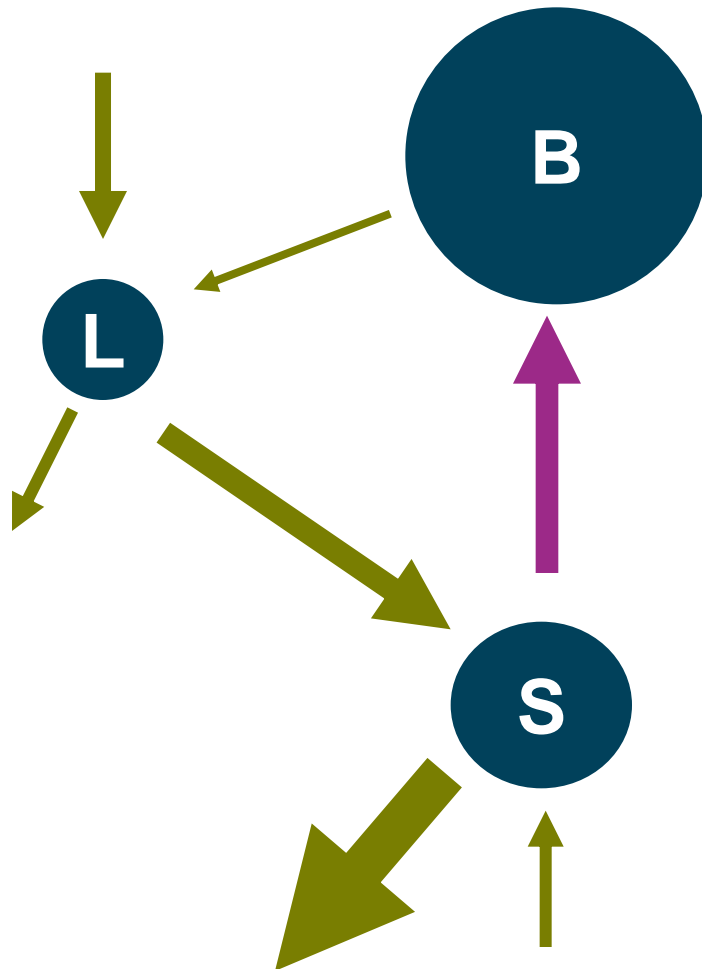


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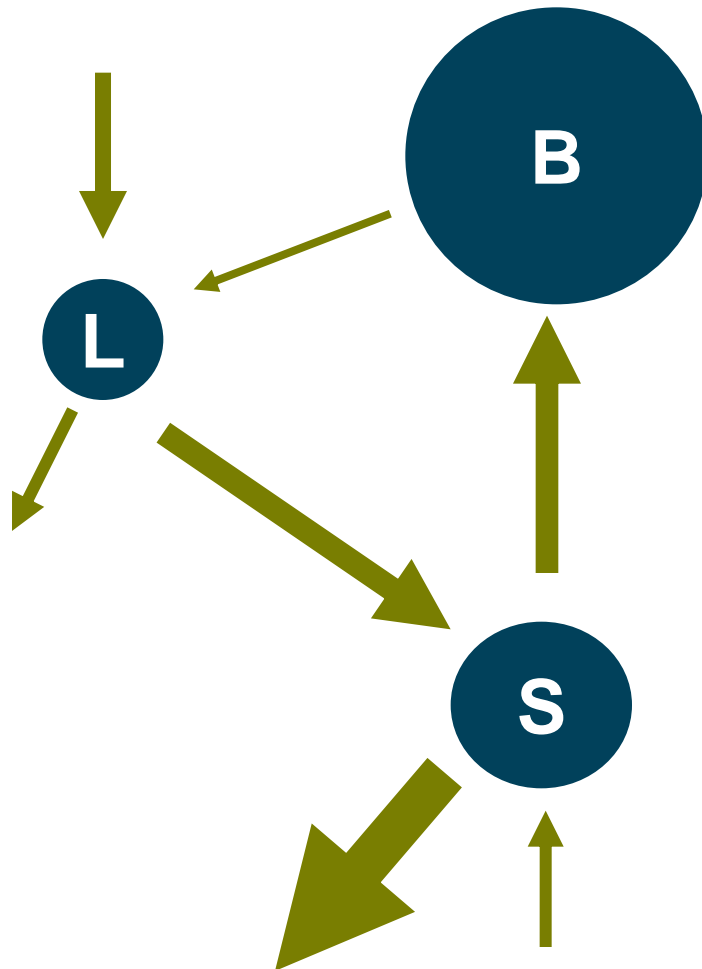
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# Introducing Ecosystems

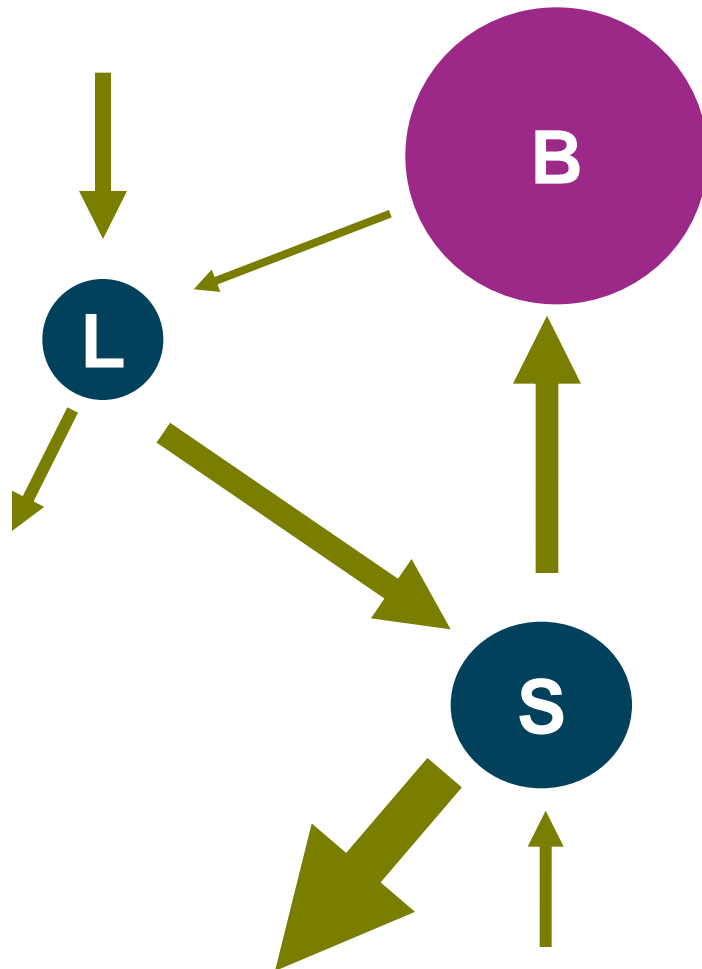


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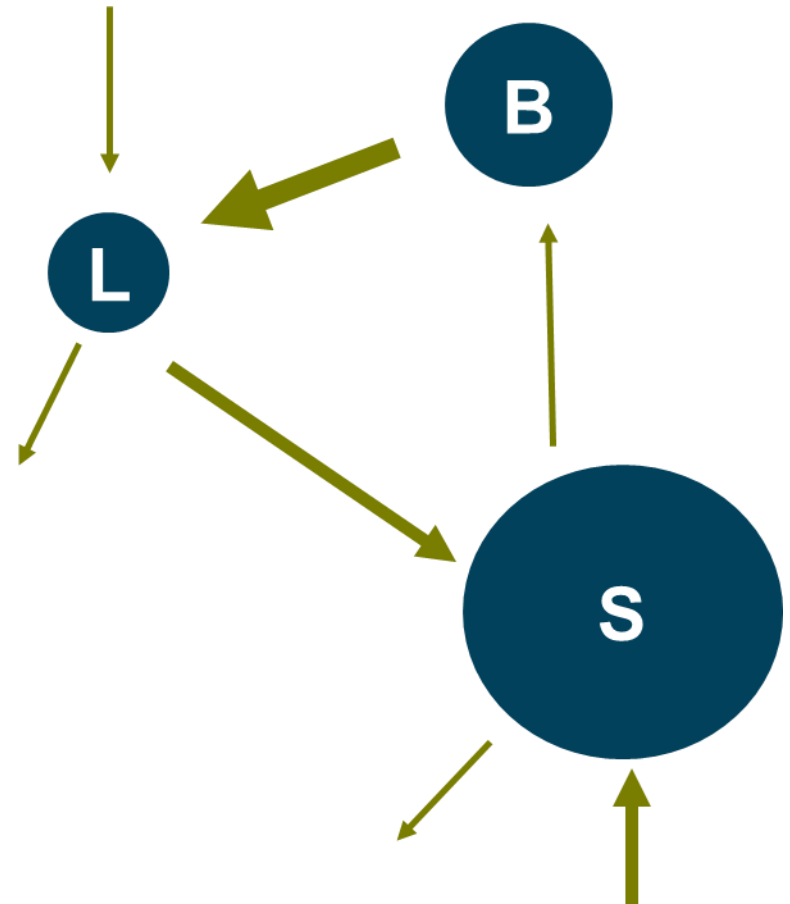
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**Ready...?**

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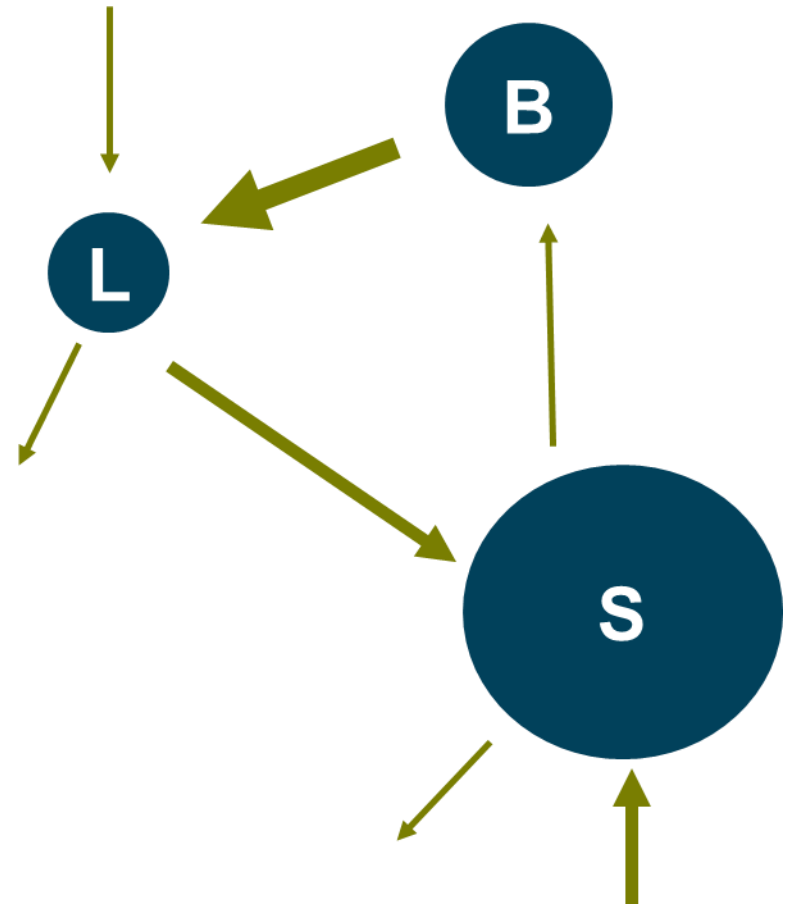


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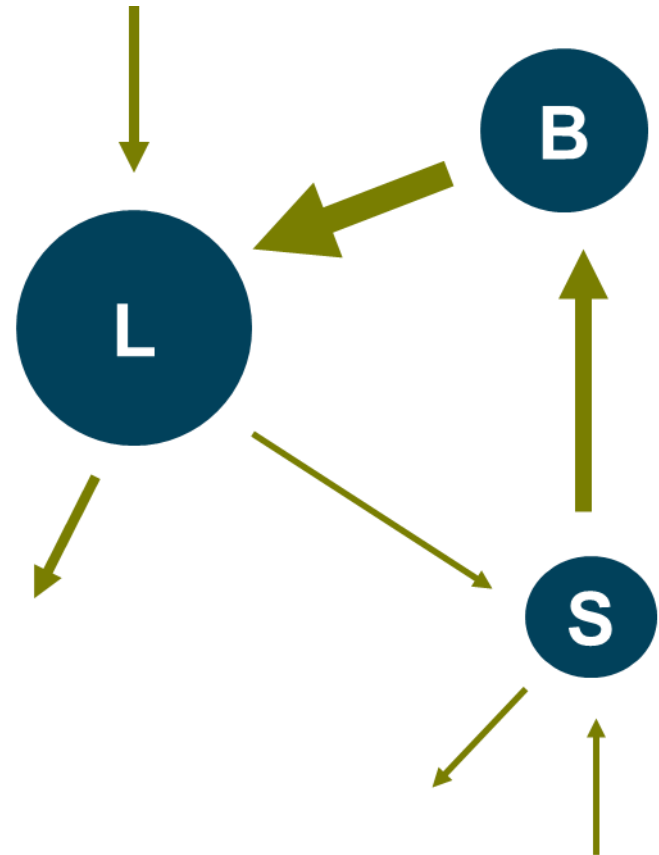


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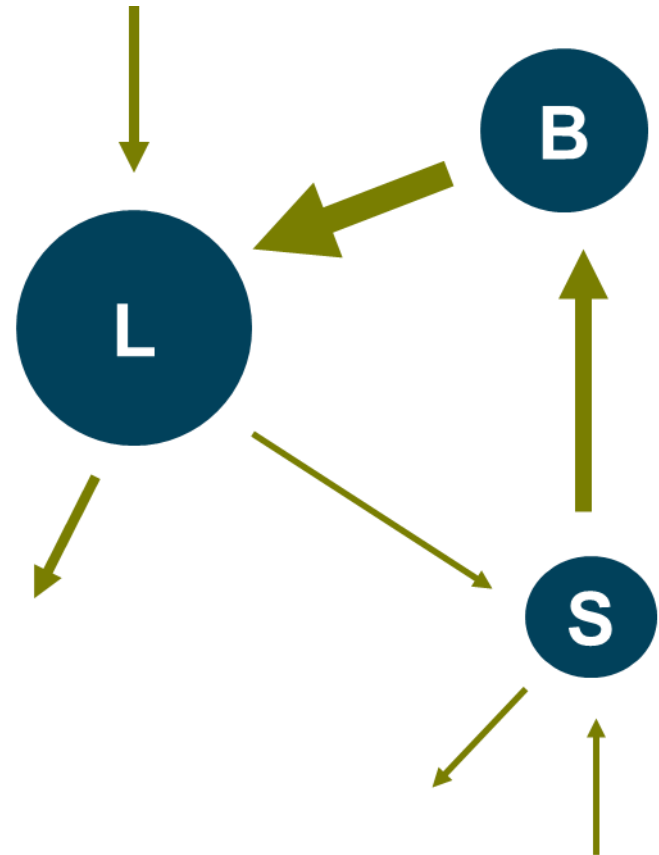




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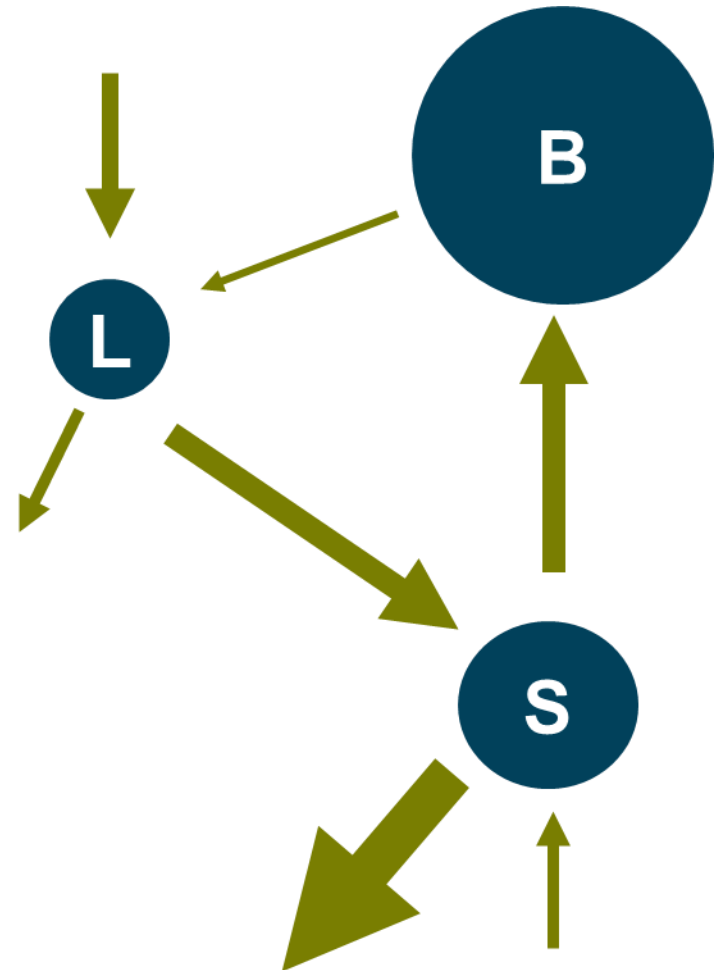
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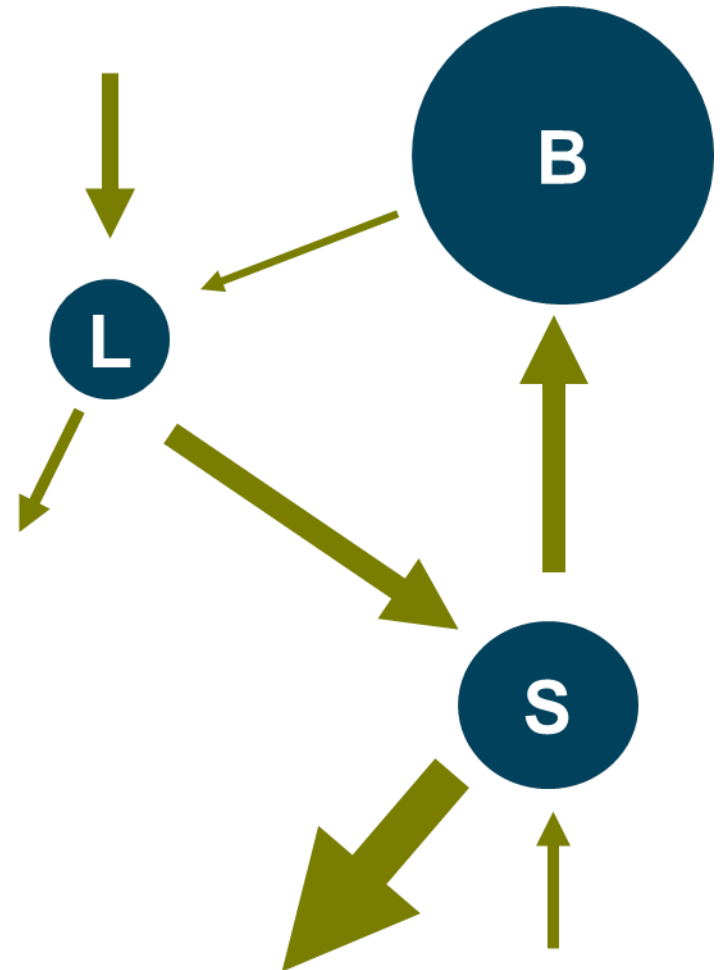
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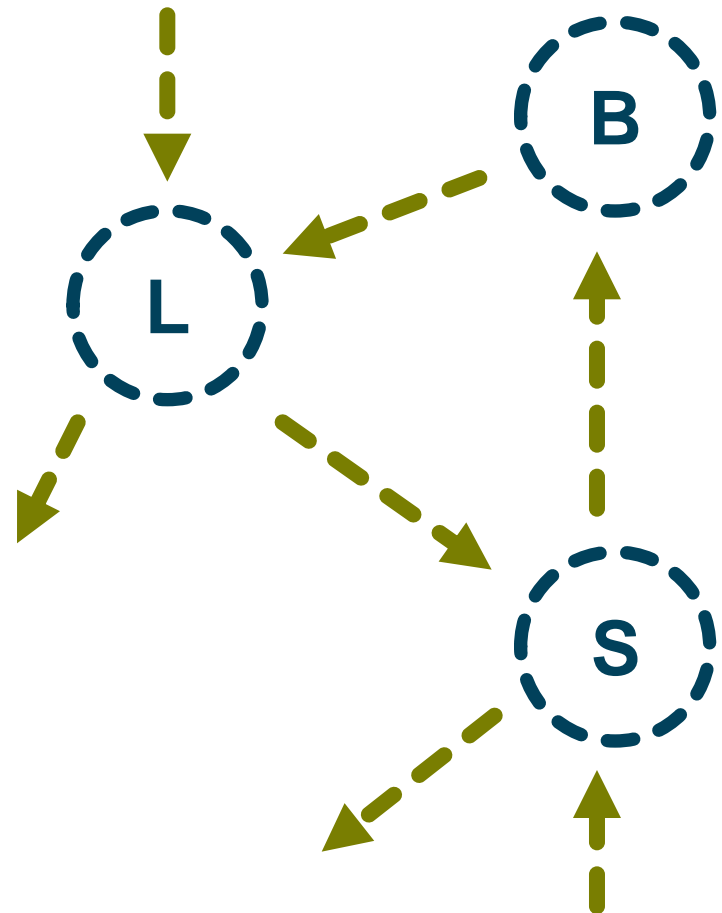
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What would a  
Gersmehl Model  
look like for a  
temperate  
woodland in the  
UK?





# Ecosystems: Key Definitions



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## Ecosystem



## Ecosystem

A network of living and non-living things interacting together





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## Biome



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## Food Web



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## Primary Producer



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## **Primary Producer**

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**Secondary  
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**Herbivore**



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An organism that only feeds on meat (animals)



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**Omnivore**





## Omnivore

An organism that eats both  
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## Tropic Level



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## Trophic Level

The position an organism occupies in a food chain



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**Biotic**



## **Biotic**

Living things within an  
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## **Biotic**

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Non-living things in an ecosystem





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# Food Webs and Energy Flows

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On your sheet, draw  
arrows that show the  
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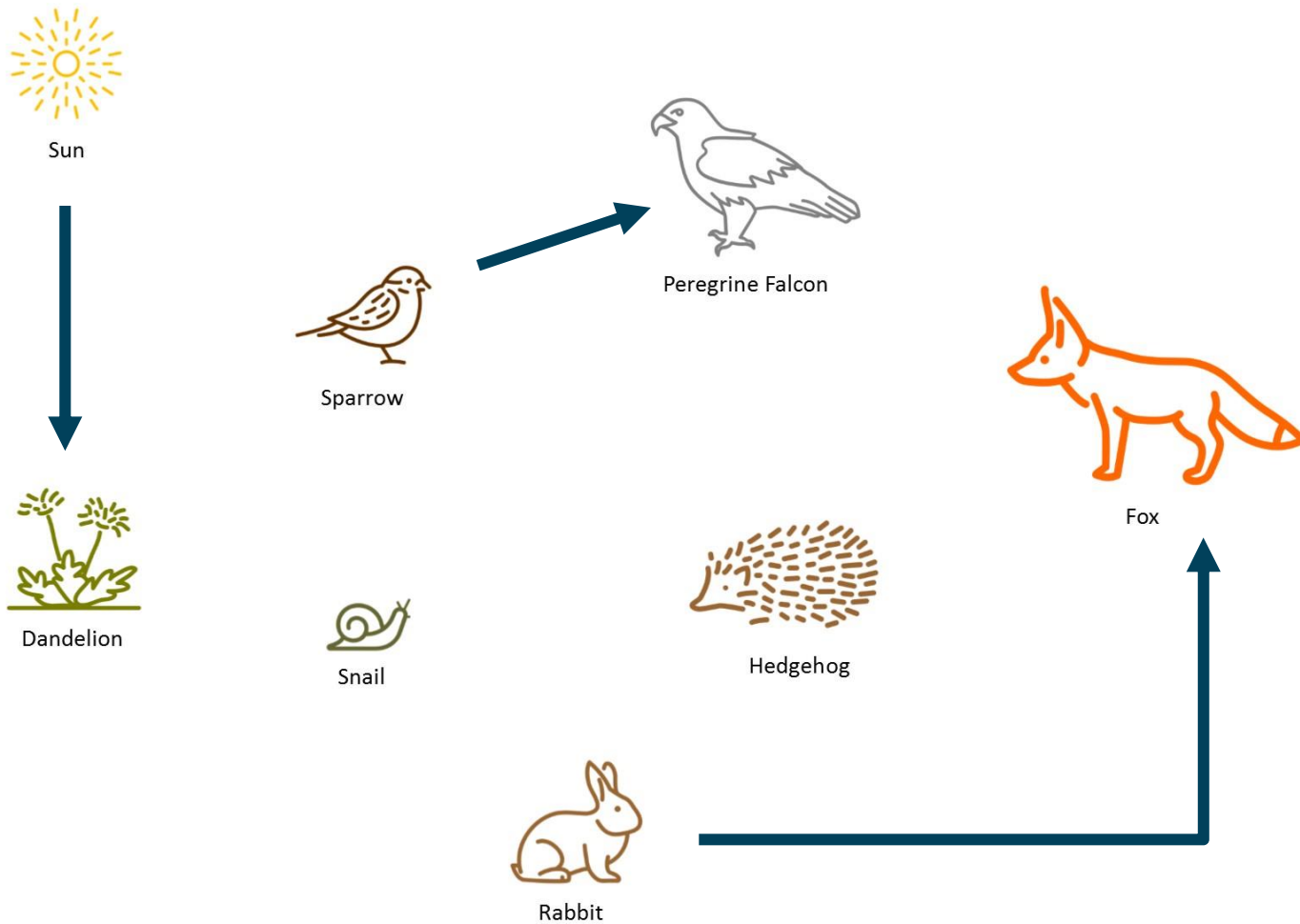


Rabbit

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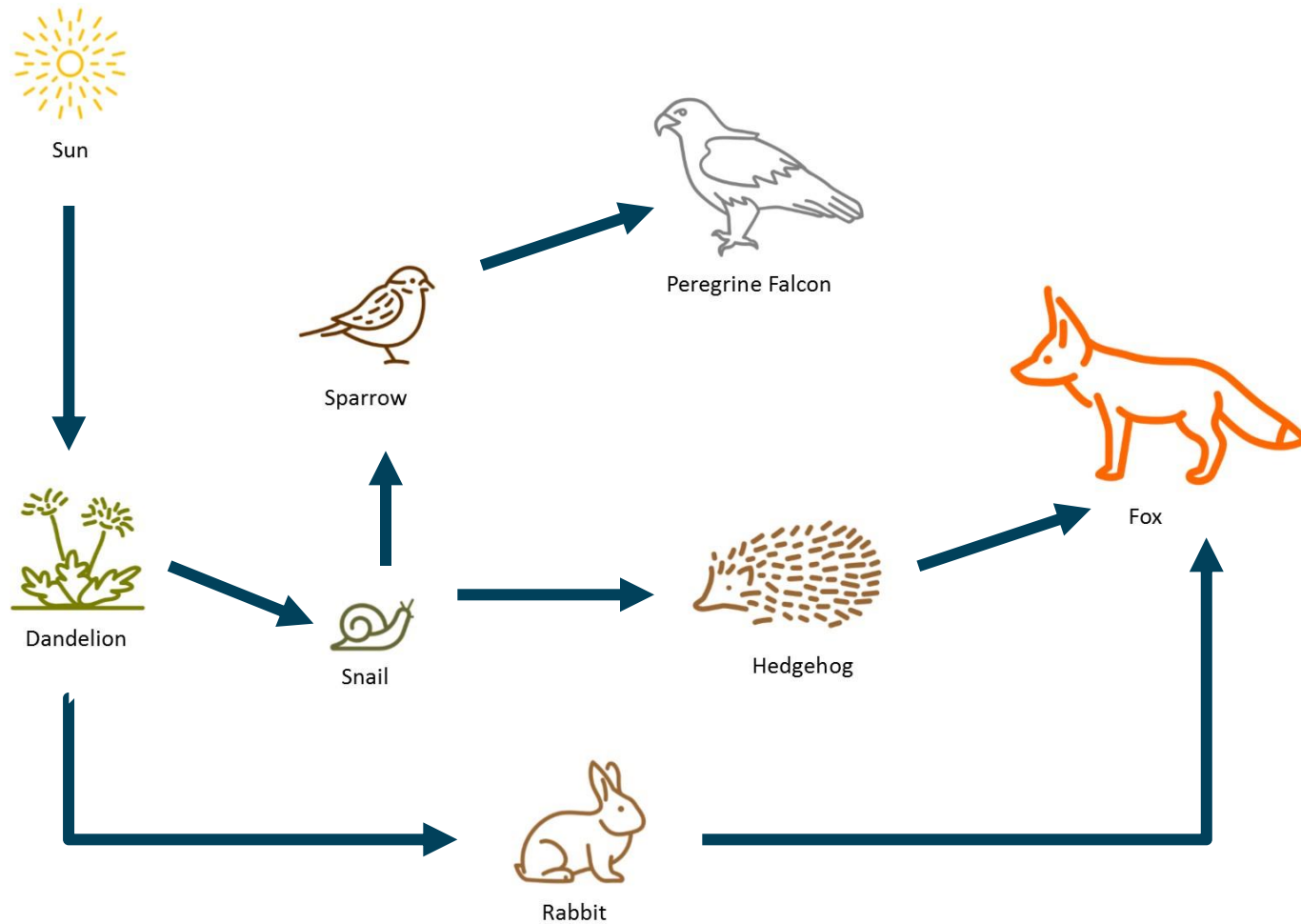
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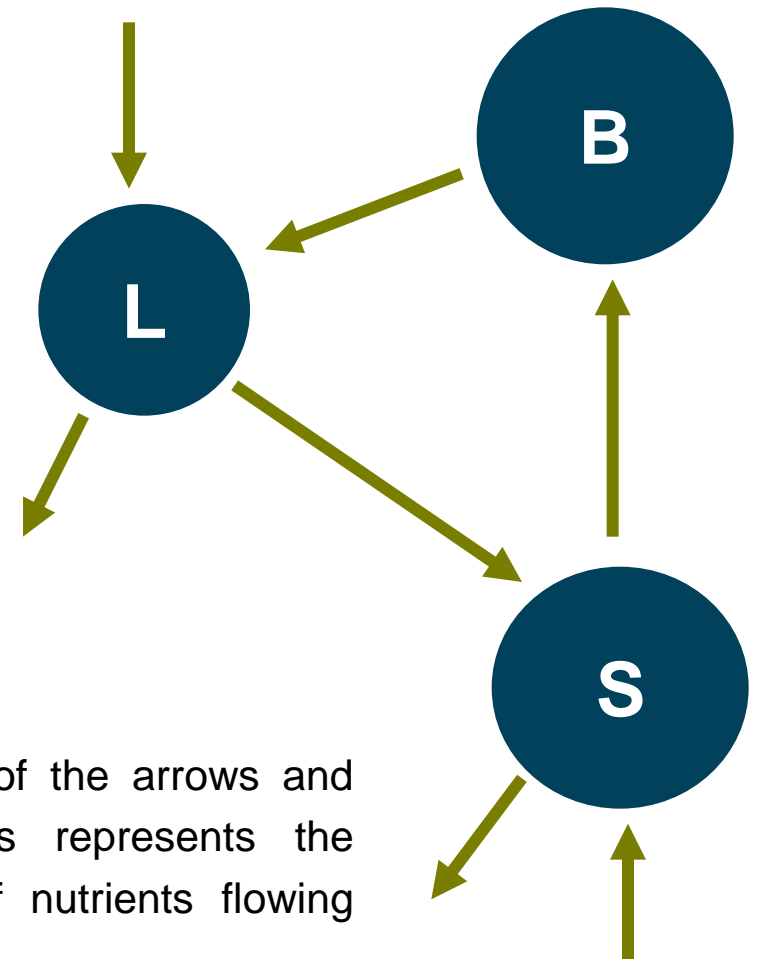
# Gersmehl's Model

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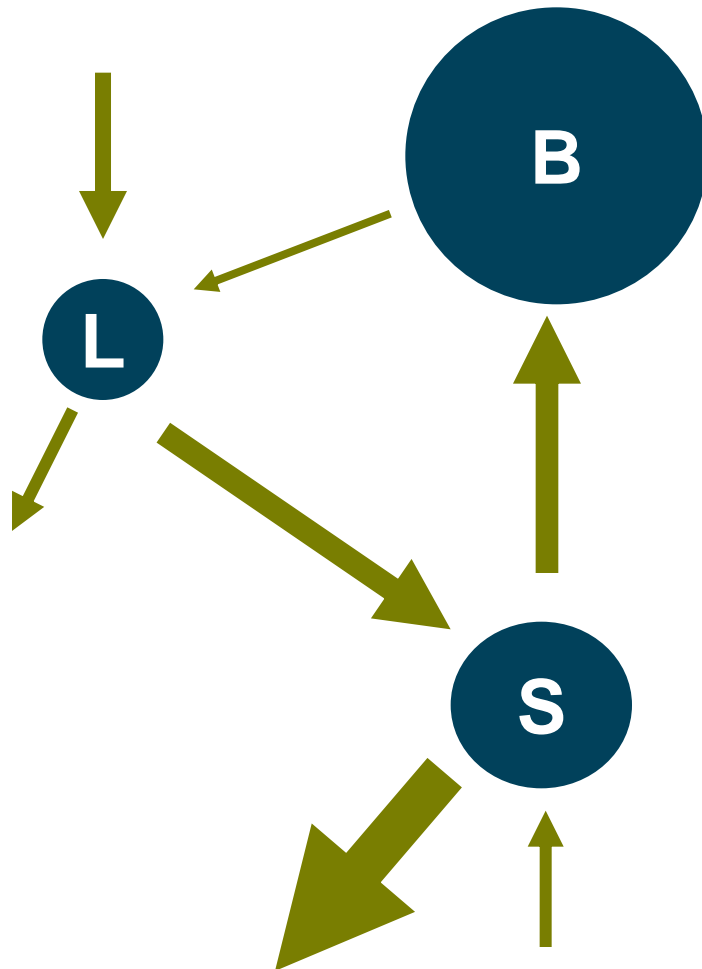
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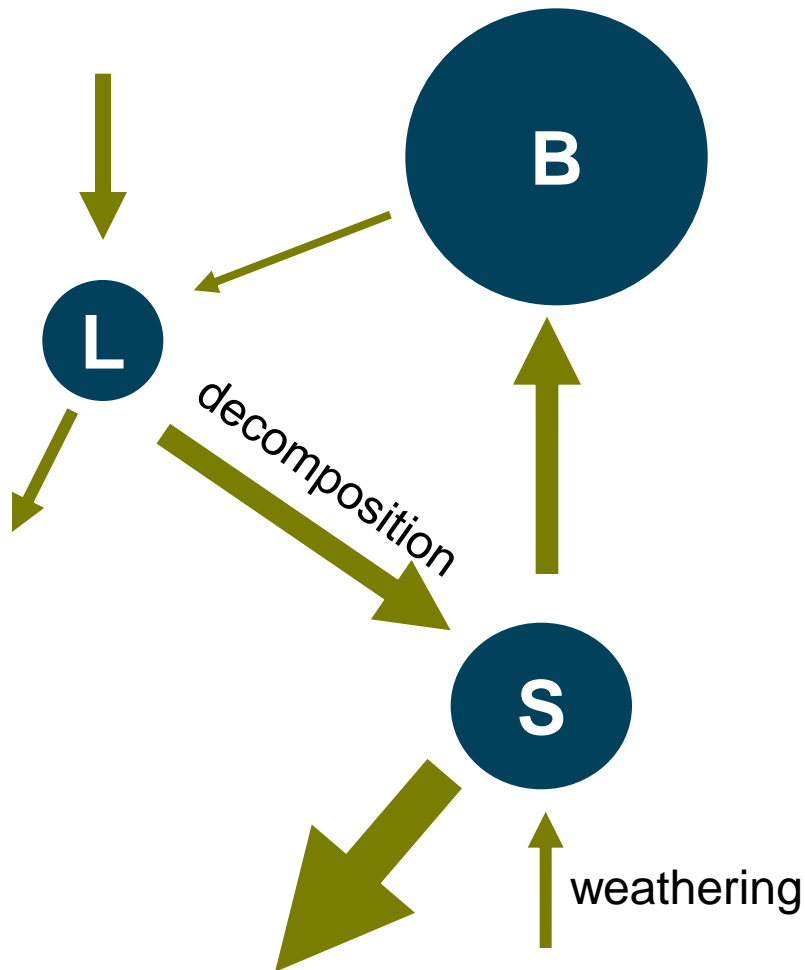
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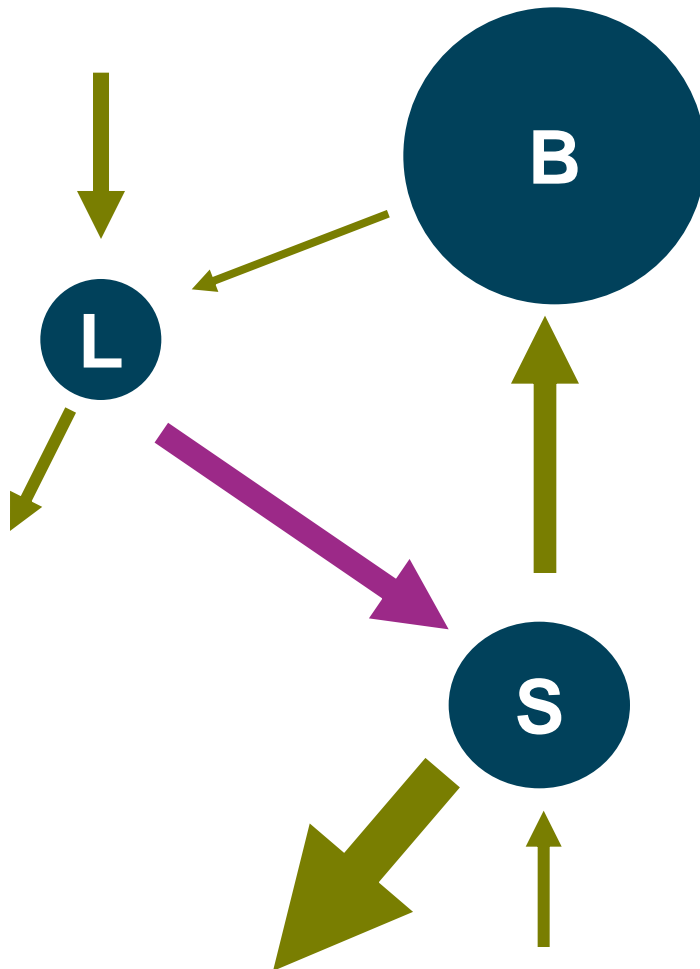


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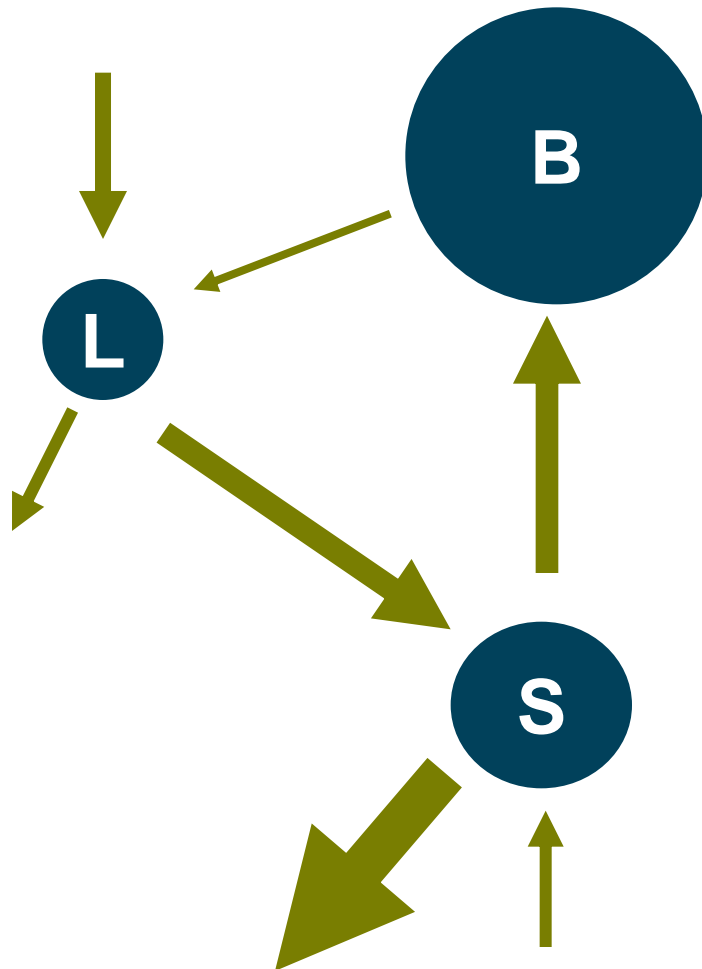
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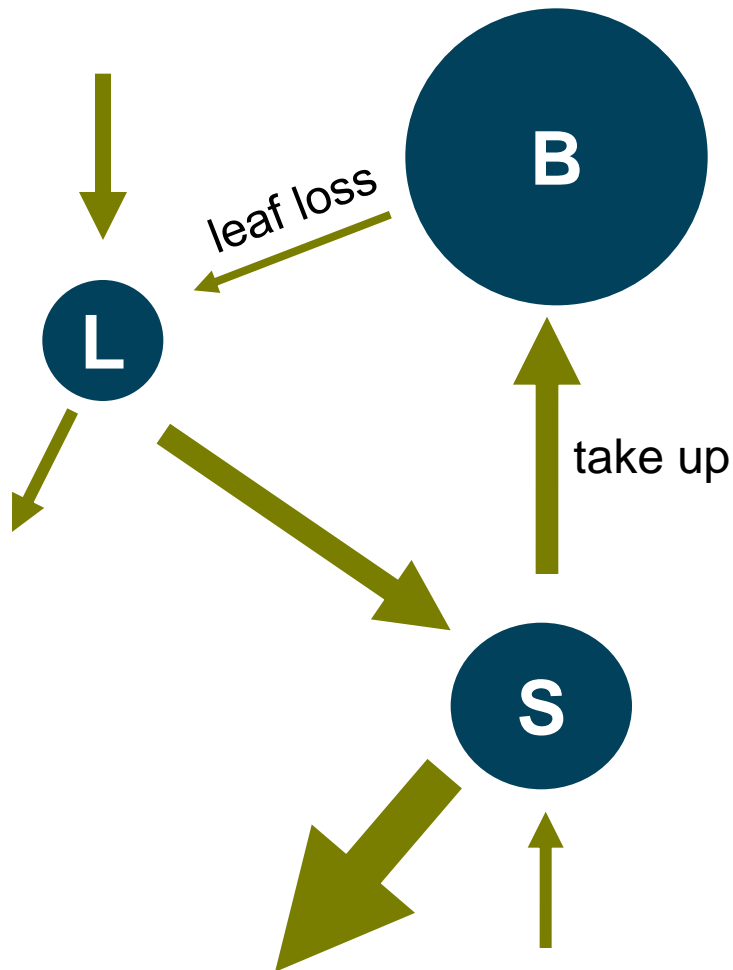
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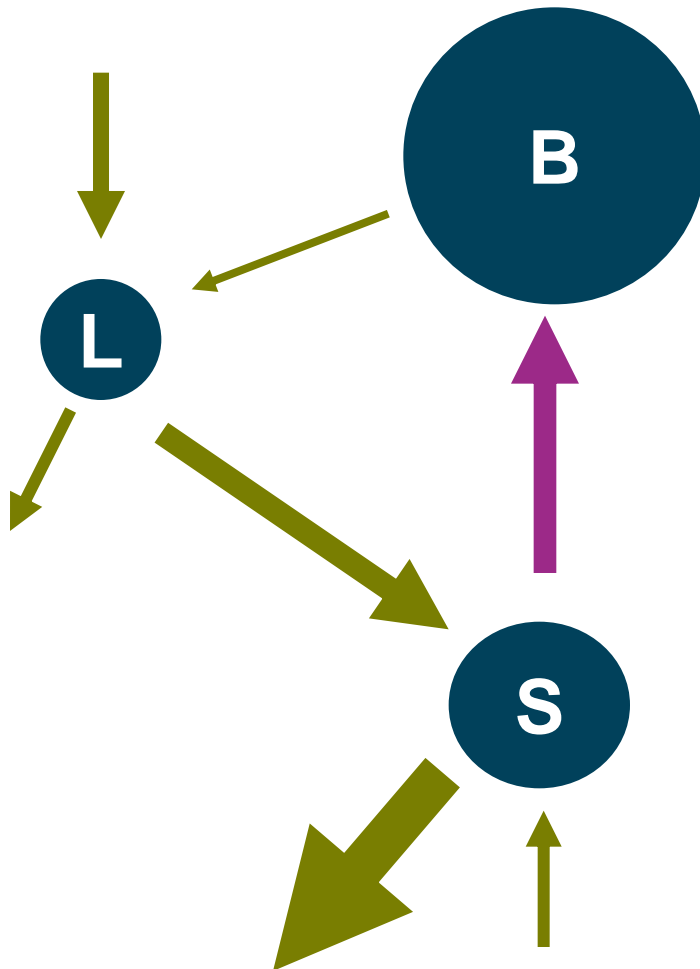
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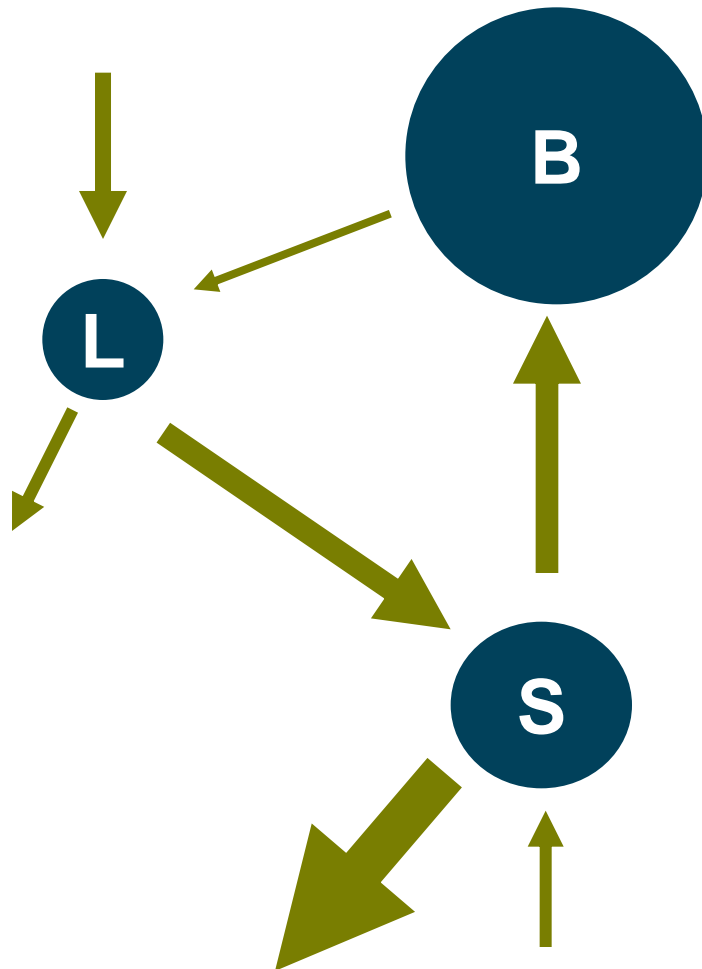
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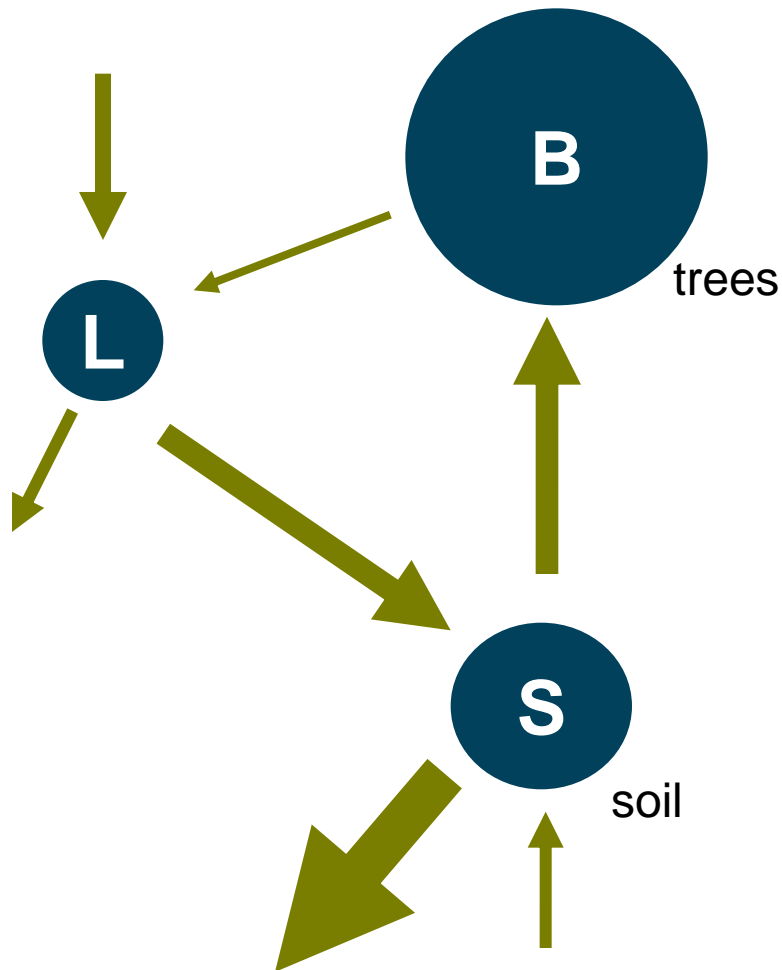
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In this example, which is greater:

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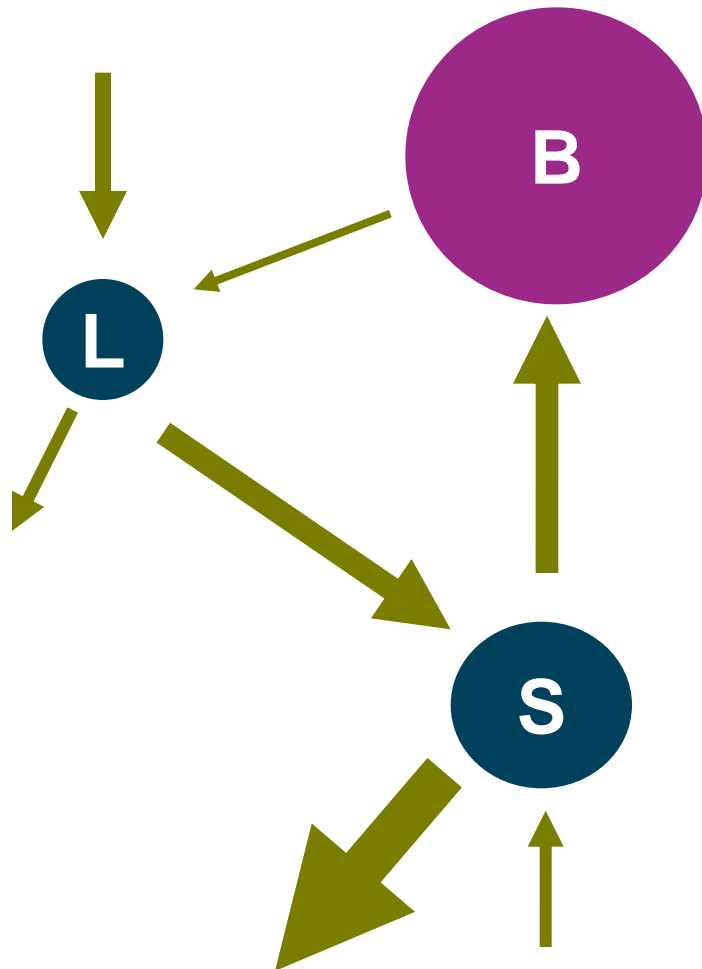
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# Match the Biome





# Introducing Ecosystems

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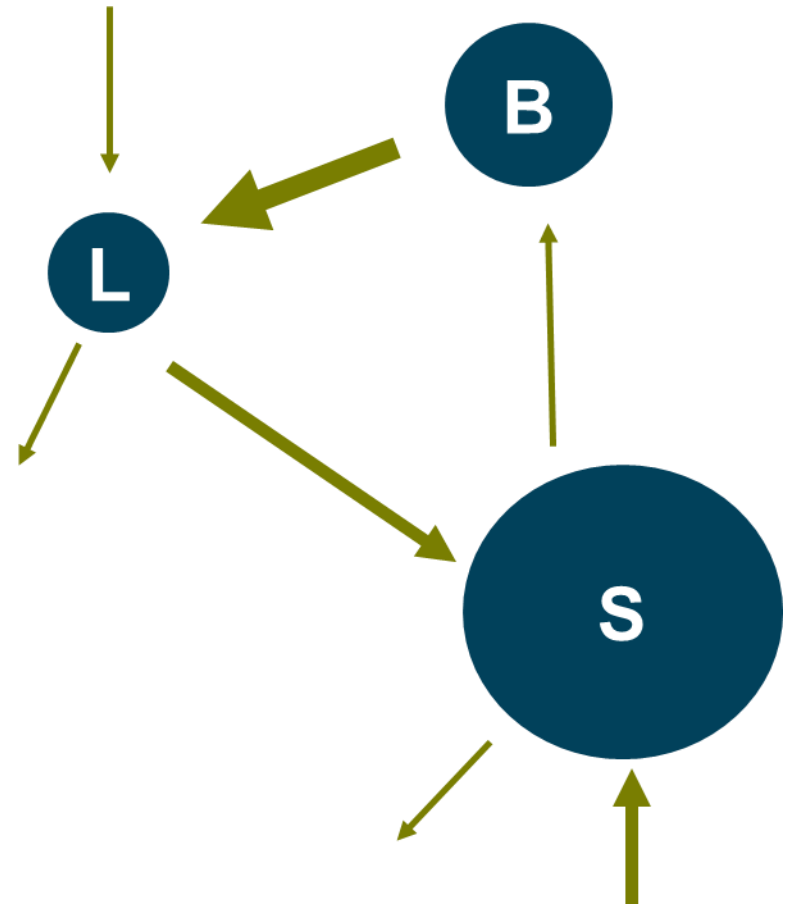
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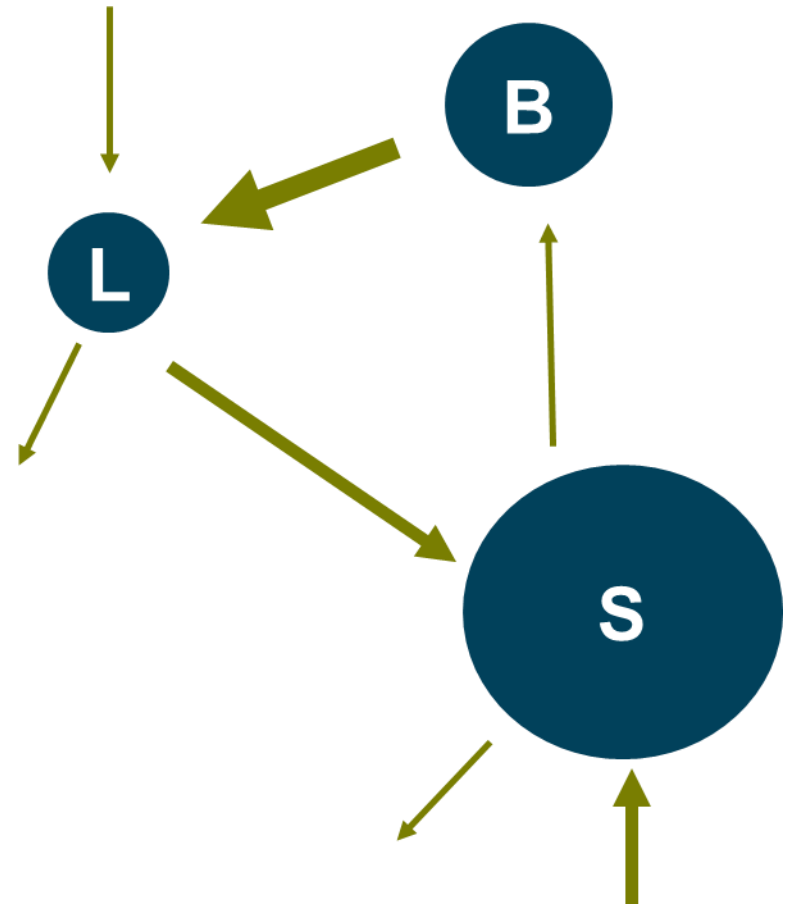


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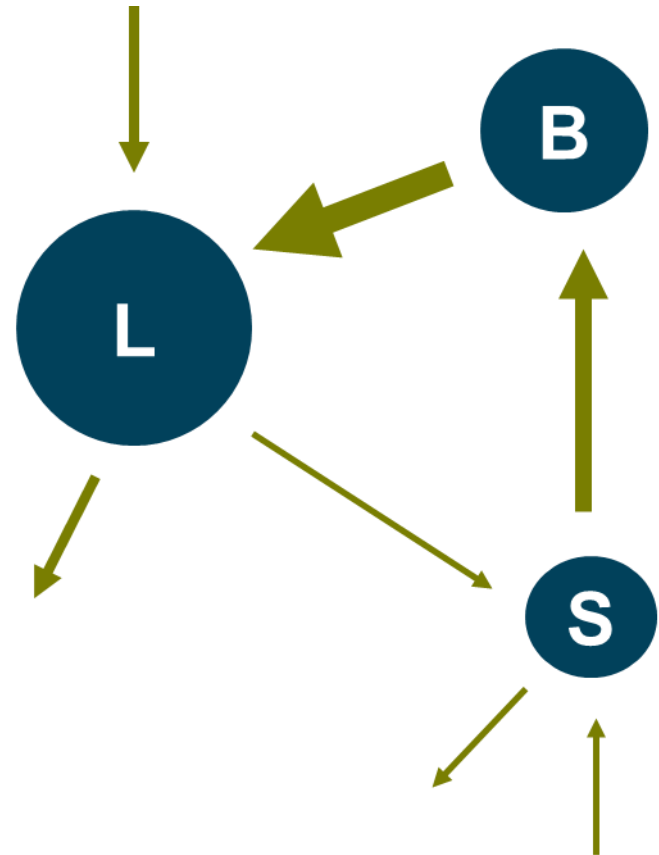


- c) Grasslands of Central USA  
(good drainage gives high organic content to soil)

# Introducing Ecosystems

Which description matches the model shown?

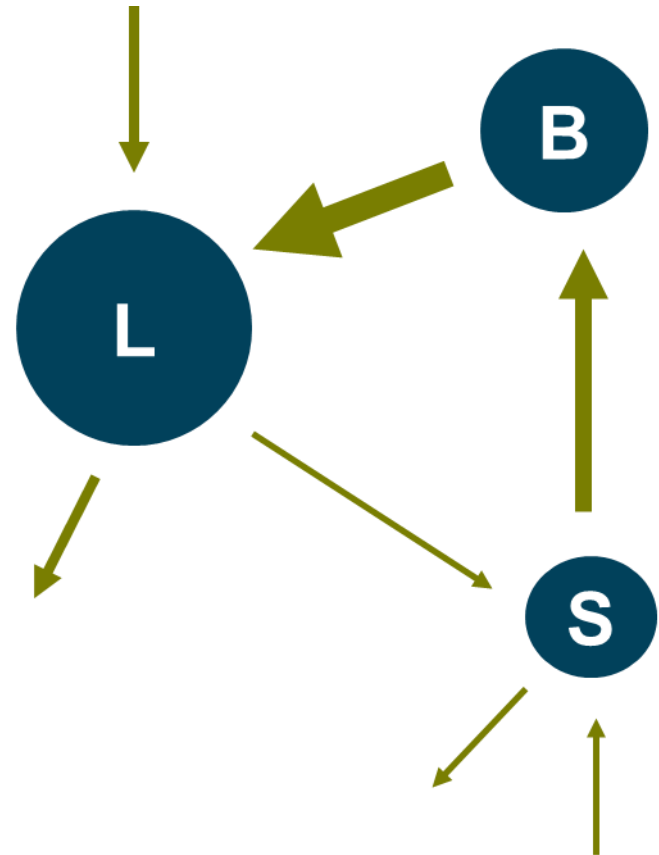
- a) Coniferous forest in Scandinavia  
(a constant supply of leaf litter which decomposes slowly due to cold temperatures)
- b) Tropical rainforest in Brazil  
(tall, densely growing trees; thin soils results in leaching)
- c) Grasslands of Central USA  
(good drainage gives high organic content to soil)
- d) None of the above



# Introducing Ecosystems

Which description matches the model shown?

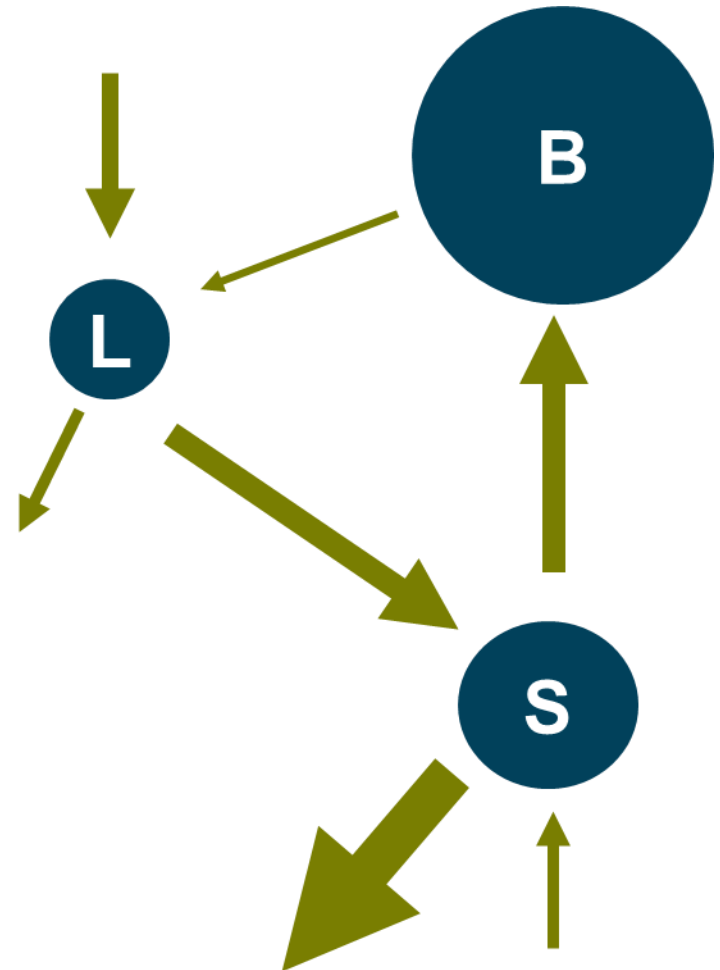
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# Introducing Ecosystems

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# Introducing Ecosystems

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Which description matches the model shown?

- b) Tropical rainforest in Brazil  
(tall, densely growing trees; thin soils results in leaching)

